INVESTOR IN PEOPLE

PRIORITY DOCUMENT

SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH RULE 17.1(a) OR (b)

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

REC'D **3 0 SEP 2003**

WIPO
PCT

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.
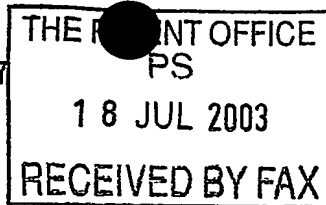
Signed

Dated   12 September 2003

Patents Form 1/77

Patents Act 1977
(Rule 16)

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road
Newport
South Wales
NP10 8QQ

1. Your reference	P017734GB	18JUL03 E823715-1 002246
2. Patent application number *(The Patent Office will fill in this part)*	0316879.6	1 8 JUL 2003

3. Full name, address and postcode of the or of each applicant *(underline all surnames)*

INTELLPROP LIMITED
PO BOX 626
NATIONAL WESTMINSTER HOUSE
LE TRUCHOT ST PETER PORT
GUERNSEY

Patents ADP number *(if you know it)*   6894604001

If the applicant is a corporate body, give the country/state of its incorporation

A GUERNSEY COMPANY

4. Title of the invention

TELECOMMUNICATIONS SERVICES APPARATUS

5. Name of your agent *(if you have one)*

D Young & Co

"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

21 New Fetter Lane
London
EC4A 1DA

Patents ADP number *(if you know it)*   59006 ✓

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and *(if you know it)* the or each application number

Country	Priority application number *(if you know it)*	Date of filing *(day / month / year)*

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application	Date of filing *(day / month / year)*

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer 'Yes' if*
   a) any applicant named in part 3 is not an inventor, or
   b) there is an inventor who is not named as an applicant, or
   c) any named applicant is a corporate body. *See note (d))*

Yes

Patents Form 1/77

Patents Form 1/77

9. Enter the number of sheets for any of the
   following items you are filing with this form.
   Do not count copies of the same document

Continuation sheets of this form	NONE
Description	5
Claim(s)	0
Abstract	0
Drawing(s)	1

10. If you are also filing any of the following,
    state how many against each item.

Priority documents	0
Translations of priority documents	0
Statement of inventorship and right to grant of a patent *(Patents Form 7/77)*	2 1
Request for preliminary examination and search *(Patents Form 9/77)*	0
Request for substantive examination *(Patents Form 10/77)*	0
Any other documents *(please specify)*	Facsimile Letter Dated 18 July 2003

11.   I/We request the grant of a patent on the basis of this application.

Signature D Young & Co   Date 18 July 2003

D Young & Co (Agents for the Applicants)

12. Name and daytime telephone number of
    person to contact in the United Kingdom

Frances Goddard   023 8071 9500

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

a)   *If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.*

b)   *Write your answers in capital letters using black ink or you may type them.*

c)   *If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.*

d)   *If you have answered 'Yes' Patents Form 7/77 will need to be filed.*

e)   *Once you have filled in the form you must remember to sign and date it.*

f)   *For details of the fee and ways to pay please contact the Patent Office.*

Patents Form 1/7

0074888 18 JU

1

TELECOMMUNICATIONS SERVICES APPARATUS

This invention concerns the field of mobile telecommunications and in particular services involving text and voice including for example the Global System for Mobile Communications (GSM) and its associated short message services (SMS) and voice

5   communication capabilities.

Text and voice communication are independently established as the primary means of telecommunication between individuals, and between users and organisations or applications.   Each of the mobile telephony standards supports a variant of text

10   messaging, which in the case of GSM is supported by the Short Message Services (SMS). Each mobile standard also supports voice calling.

Text message interaction with Host applications, for example for voting, purchases, or entertainment is increasingly common, and voice interaction with Host applications is

15   beginning to grow in the same was as it has previously on fixed networks in response to the development of premium rate services.

Many network operators support interactive games on mobile phones using network-based applications, and these are normally text message or WAP based. There are

20   many other applications, for example customer services, where voice communication, and in some cases text communication, is used.

The prior art treats voice and text separately. Although some complex services have been implemented in both technologies, the interaction possibilities between text and

25   voice have not been well explored. Particularly in the context of mobile phone games, the possibility of a closer link between voice and text interaction has not been exploited.

Where voice input and text output are used in conjunction in the prior art, the

30   relationship between the text and voice is prescriptive and functional only, and the system has no memory for applying knowledge in subsequent communications. For

example, a telephone call to a directory service may result in a telephone number being sent by text message to the callers phone. But next time he calls, there will be no influence from a previous call, as there is no history or memory maintained by this application.

5

According to the invention there is provided a Telecommunications Services Apparatus operable to communicate by both voice and text with users. Text communications to the apparatus are parsed by a sub-platform which may be known as a Wizard, whilst voice communication is processed by a sub-platform known as a

10 Voice Services Equipment capable of interacting by playing audio files or synthesising audio, accepting DTMF tones, accepting caller audio for recording and the like. The application accepts input from both text and audio, and may generate output using either route, while maintaining a memory and history of previous inputs and outputs. The application may use its memory and history of previous interactions with this user

15 or other users to influence, personalise or otherwise modify its subsequent interactions, output or flow.

Referring to Figure 1, a mobile user (10) is connected to a mobile telephone network via an MSC (12). The network preferably contains one or more SMS Routers (14) for

20 routing and filtering text messages sent by users. Alternatively, text messages may be routed via an SMSC (15). Text messages destined for an application using the invention are routed via a Wizard platform (16), which may be implemented as a separate server or as part of another network component. The wizard processes these text messages and communicates with the application (18). Voice interaction with the

25 application is via a Voice Services Equipment (17) or equivalent function in the network. The application is also able to initiate outgoing calls or text messages.

The present invention allows a user to interact by either voice or text (or both) with an external system or application, such that the flow, content or outcome of an interaction

30 may be affected by application memory that stores information relating to the content of a previous interaction using text or voice. For example in a mobile phone game application, the audio heard during a voice prompt could depend on the text sent by the

user in a previous text message, opening the possibility of a rich and complex game environment with a higher degree of realism than has been possible before.

For example, a use might text a message such as 'My name is Lucy', or 'I prefer red'. In a subsequent voice call or text message the system output dialogue might be modified to include the phrase "Hello Lucy..." or "I chose a red one for you". The intention here is to introduce a richness of detail at the lowest level, providing a more engaging and rewarding intercommunication experience.

Conversely, voice communications from a user may be interpreted at least in part by use of an Automatic speech recogniser (ASR) or by a live Agent or a combination of the two. Keywords or phrases from this dialog may be used to influence future outgoing texts or dialogs with the user.

Incoming text messages are processed as follows. Messages are directed to the Wizard server platform, preferably by being groomed from other traffic using an SMS Router. The grooming criterion could be destination number for example. Groomed traffic is passed to the Wizard preferably over TCP/IP. The Wizard parses the message in an application dependent fashion, and communicates relevant information to the application, which may be on a separate platform reached over TCP/IP, or may be running on the same platform as the Wizard. The application stores the information, and may use it in a later communication with the user. For example, it may cause the Wizard to generate a text message and drop in a reference to information previously provided by the user, in which case the message is sent over TCP/IP to the SMS Router. The Router delivers a Mobile Terminated text message, preferably directly rather than via the SMSC for speed. Alternatively the application may cause the VSE (17) to initiate a voice call to the user, preferably with the content created from concatenated recordings, or alternatively synthesised. Again the application has the option of referencing information previously provided by this user, or by another user.

Voice calls from the user to the application are routed using the dialled number to the VSE platform. Under application control, audio prompts may be played, and choices

or recorded audio collected. Significantly, the audio interaction may depend not only on previous voice interactions, but also on previous text interactions. This means that the entire flow of the interaction may be modified by the historical information collected by the platform during previous interactions. This knowledge stored in the

5   application can lend an unexpected human-like quality or realism to automated processes, and provide an invaluable extra dimension to mobile games.

As a specific example, the platform may have stored amongst its library of audio prompts, 10,000 or 20,000 carefully recorded and cut recordings of people's first

10   names. Having prompted the user to supply their name in one interaction, during a subsequent voice call or text exchange, which may be initiated by either the user or the platform, the application has the option to greet the user by name, or to drop their name into the communication, either as text or by concatenating the corresponding audio recording of the name with other application audio. As an alternative to high

15   quality concatenation, text to speech (TTS) techniques or voice synthesis could be used.

Preferably one number, or alternatively separate numbers, could be used for the voice and text parts of communications initiated by the user. This is an important feature,

20   since the user has only to dial or text to a single number whatever the medium of the communication. Also the CLI of interactions initiated by the application, whether a short code or a long number, will always be the same and hence is more recognisable by the subscriber. A single number system could use a virtual mobile number with voice call redirection to implement routing of voice and texts to an application

25   platform.

The invention provides the capability for detailed personalisation of content shared between voice and text aspects of a communication, or set of communications. It works in both directions, i.e. voice input influencing both text and voice output, and

30   text input influencing both voice and text output.

It is also possible that interactions with a user may be influenced by interactions with other users, and this is particularly true of multi-user games.

In so far as the embodiment(s) of the invention described above may be implemented, at least in part, using software controlled processing apparatus, it will be appreciated that a computer program providing such software control and a storage medium by which such a computer program is stored are envisaged as aspects of the invention.
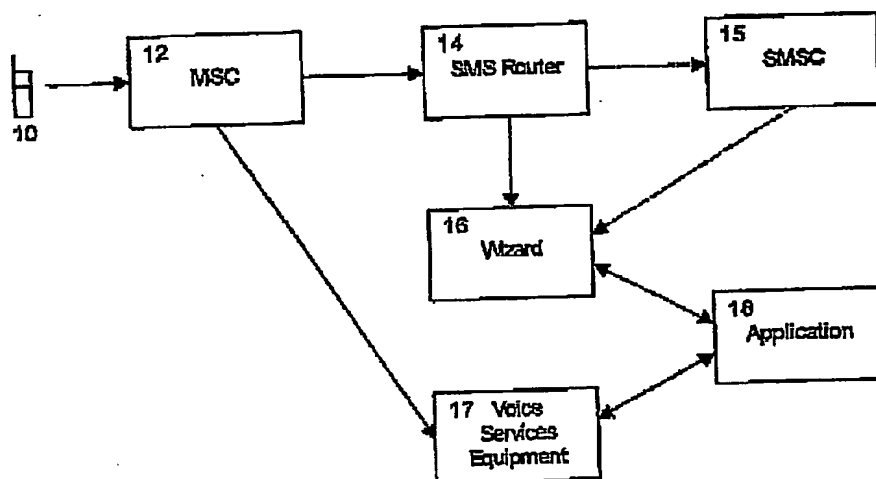
Figure 1

This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

❑ **BLACK BORDERS**

❑ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**

❑ **FADED TEXT OR DRAWING**

❑ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**

❑ **SKEWED/SLANTED IMAGES**

❑ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**

❑ **GRAY SCALE DOCUMENTS**

☑ **LINES OR MARKS ON ORIGINAL DOCUMENT**

❑ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**

❑ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.
As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.